



## Materials Engineering Branch

### TIP\*



No. 086    Cleaning Open-cell Polyurethane Foam for Flight Use

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Flexible, open-cell polyurethane foam sheet material has numerous applications in the fabrication, shipping, and storing of space flight hardware. Some of the more common uses are as a shock absorber in electronic packages, as lightweight thermal louver blade material and to cushion packaged flight hardware during shipping and storage.

Most of the polyurethane foams do not meet the acceptable outgassing criteria in the "as-received" condition. Because of this fact, it was once recommended to wash and then bake the foam before use to obtain acceptable outgassing results. After evaluating the impact of this procedure over a period of several years, it has become evident that the washing portion of the process was not required. A bake-out alone is sufficient to achieve acceptable outgassing results.

The optimum bake-out parameters are 80-100° C in vacuum for 24 hours. These parameters may be varied depending upon the specific foam being used. If equipment for vacuum baking is not available, a convection oven has proven successful in many cases. However, the vacuum oven is more efficient and less deleterious to the foam.